

Name: _____

Date: _____

Ch 7 Test Real and Complex Numbers

Multiply and simplify each Real radical expression.

1. $(7 - 4\sqrt{3})(7 - 4\sqrt{3})$

2. $(8 + \sqrt{6})(-4 - \sqrt{6})$

Rationalize the denominator

3. $\frac{7}{4 + \sqrt{3}}$

4. $\frac{\sqrt{5} + 3}{2 + \sqrt{5}}$

Simplify each real number.

5. $\sqrt{(75x^3y^4)}$

6. $\frac{\sqrt[3]{500x^7y^{-3}}}{\sqrt[3]{2z^2}}$

Write without a rational exponent.

7. $(8xy)^{\frac{2}{3}}$

Write in simplest Radical Form

8. $\sqrt[4]{16y^{10}}$

Solve

9. $\sqrt{y+1} - 5 = 8$

10. $4 + \sqrt{10-x} = 6 + \sqrt{4-x}$

11. $(3+i)x + i = 5i$

12. $(1+2i)x + 3 - 2i = 4 - 5i + 3ix$

Express each number in terms of i .

13. $\sqrt{-64x^3}$

14. $-\sqrt{-147}$

Multiply.

15. $\sqrt{-6}\sqrt{-8}$

16. $-\sqrt{-5}(-\sqrt{-5})$

Add or Subtract.

17. $6i + (-3i) + 5$

18. $(8-6i)-(-14+2i)$

Simplify.

19. $i^{15} + i^{32} - 2i^{72}$

Calculate.

21. $|-4+5i|$

Solve for x and y .

22. $12x + yi = 16 - i$

Multiply or Divide

23. $(4 + i)(7 - 3i)$

24. $(1 + i\sqrt{3})(6 - 3i\sqrt{3})$

25. $\frac{i - \sqrt{5}}{\sqrt{5} + 2i}$